

ACIDIC LOAM OVER RED CLAY ON ROCK

General Description: Red brown loam over a red well structured clay grading to fine grained metamorphic rock

Landform: Slopes of the central Mt. Lofty Ranges

Substrate: Precambrian age phyllite or meta-siltstone

Vegetation: Red gum - blue gum woodland



Type Site:	Site No.:	CH111	1:50,000 mapsheet:	6627-1 (Echunga)
	Hundred:	Macclesfield	Easting:	302050
	Section:	3723	Northing:	6114200
	Sampling date:	4/3/97	Annual rainfall:	850 mm average

Mid slope of a moderately steep rise, 20% slope. Hard setting surface with minor (less than 2%) phyllite fragments.

Soil Description:

<i>Depth (cm)</i>	<i>Description</i>
0-15	Dark brown loam with moderate granular structure and 10-20% phyllite fragments. Clear to:
15-25	Dark brown loam with moderate granular structure and more than 50% phyllite fragments. Abrupt to:
25-50	Dark reddish brown medium clay with strong polyhedral structure and 20-50% phyllite fragments. Clear to:
50-75	Weathering phyllite.



Classification: Melanic, Subnatric, Red Sodosol; medium, gravelly, loamy / clayey, moderate



Summary of Properties

- Drainage:** Moderately well drained. The soil may remain wet for up to a week following prolonged rain.
- Fertility:** Natural fertility is high. Test data indicate that phosphorus is deficient. Levels of other elements are satisfactory. Calcium : magnesium ratio is correct. Organic carbon levels are very high.
- pH:** Acidic at the surface, neutral at depth. Dolomitic lime is needed to correct acidity.
- Rooting depth:** 50 cm in pit.
- Barriers to root growth:**
- Physical:** Shallow depth to rock.
 - Chemical:** Possible manganese toxicity if soil becomes too acidic.
- Waterholding capacity:** Approximately 60 mm in rootzone.
- Seedling emergence:** Good to fair - surface is prone to seal over and set down hard.
- Workability:** Fair to good. Hard setting surface is prone to compaction.
- Erosion Potential:**
- Water:** Moderately high due to the slope.
 - Wind:** Low.

Laboratory Data

Depth cm	pH H ₂ O	pH CaCl ₂	CO ₃ %	EC1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	SO ₄ mg/kg	Boron mg/kg	Trace Elements mg/kg (EDTA)				CEC cmol (+)/kg	Exchangeable Cations cmol(+)/kg				ESP
											Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
Paddock	5.5	4.7	0	0.13	-	4.2	18	305	9.6	1.2	1.8	653	105	5.9	17.4	9.7	2.8	0.23	0.55	1.3
0-15	5.8	4.9	0	0.07	-	3.3	7	238	5.7	0.8	1.5	377	180	3.1	15.6	8.8	2.8	0.39	0.35	2.5
15-25	6.6	5.4	0	0.04	-	1.1	5	377	2.5	0.4	1.6	89	55	1.5	12.7	7.3	3.0	0.82	0.26	6.4
25-50	6.7	5.6	0	0.05	-	0.8	2	342	11	0.6	2.4	45	8.0	1.6	24.8	10.9	5.9	1.60	0.70	6.5
50-75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Note: Paddock sample bulked from 20 cores (0-10 cm) taken around the pit.
 CEC (cation exchange capacity) is a measure of the soil's capacity to store and release major nutrient elements.
 ESP (exchangeable sodium percentage) is derived by dividing the exchangeable sodium value by the CEC.

Further information: [DEWNR Soil and Land Program](#)

